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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/754,890	01/05/2001	K. Rustan M. Leino	9772-0274-999	4747

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EXAMINER	
YIGDALL, MICHAEL J	
ART UNIT	PAPER NUMBER
2122	

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action	**Application No.** *09/754,890*	**Applicant(s)** LEINO ET AL.	
	Examiner Michael J. Yigdall	**Art Unit** 2122	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 24 June 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

a) □ The period for reply expires ______months from the mailing date of the final rejection.

b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1.□ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.

2.□ The proposed amendment(s) will not be entered because:

(a) □ they raise new issues that would require further consideration and/or search (see NOTE below);

(b) □ they raise the issue of new matter (see Note below);

(c) □ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

(d) □ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____.

3.□ Applicant's reply has overcome the following rejection(s): _____.

4.□ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

5.☒ The a)□ affidavit, b)□ exhibit, or c)☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: *See Continuation Sheet*.

6.□ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.

7.☒ For purposes of Appeal, the proposed amendment(s) a)□ will not be entered or b)☒ will be entered ~~and an explanation of how the new or amended claims would be rejected is provided below or appended.~~

(typographical errors)

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____.

Claim(s) objected to: _____.

Claim(s) rejected: *1-47*.

Claim(s) withdrawn from consideration: _____.

8.□ The drawing correction filed on _____ is a)□ approved or b)□ disapproved by the Examiner.

9.□ Note the attached Information Disclosure Statement(s)(PTO-1449) Paper No(s). _____.

10.□ Other: _____

Continuation of 5.

Applicant's remarks primarily reiterate the arguments submitted in the previous response (February 19, 2004), which were subsequently addressed in the previous Office action (May 17, 2004).

Applicant contends that the combination of Detlefs and Chan does not teach or suggest, "inserting flow control labels into the sub-equations of the logical equation, the flow control labels identifying conditional branch points in the specified computer program" (page 11, bottom to page 12, top).

However, Detlefs teaches a static checking method (see the title) comprising a logical equation derived from a computer program (see page 23, section 4, paragraph 1, lines 1-4). Detlefs further teaches labeling any sub-formula or sub-equation of the logical equation (see page 29, section 6, paragraph 2, lines 1-2) with labels that identify source positions (lines 7-8). Thus, Detlefs teaches inserting labels into the sub-equations of the logical equation, the labels identifying locations in the specified computer program.

Chan teaches markers and scalars associated with conditional branches for identifying paths of execution, i.e. the flow of control, through the computer program (see column 1, lines 38-53). Thus, Chan teaches flow control labels identifying conditional branch points in the specified computer program.

Therefore, in combination, Detlefs and Chan teach inserting flow control labels into the sub-equations of the logical equation, the flow control labels identifying conditional branch points in the specified computer program.

Applicant contends that Detlefs does not teach or suggest, "flow control labels for conditional branch points of the program associated with the identified variable values" (page 12, middle).

However, Detlefs teaches a theorem prover for evaluating the verification condition (see page 23, section 4, paragraph 1, lines 4-8). Detlefs further teaches generating a counter-example and identifying both the sub-formulas and the associated labels that are false or inconsistent with the condition (see page 29, section 6, paragraph 2, lines 3-7). Such sub-formulas identified by Detlefs are inherently comprised of variable values. Thus, Detlefs teaches labels for points of the program associated with the identified variable values.

Therefore, in combination with Chan, Detlefs teaches flow control labels for conditional branch points of the program associated with the identified variable values.

Applicant contends that Detlefs and Chan, alone or in combination, do not teach or suggest, "[a] program trace that identifies a path through the computer program when the counter-example identifies one or more of the flow control labels" (page 12, bottom to page 13, top).

However, Detlefs teaches error messages that identify source positions in the computer program based on the labels identified in the counter-example (see page 29, section 6, paragraph 2, lines 1-4 and 7-9). Thus, Detlefs teaches a program trace that identifies positions in the computer program when the counter-example identifies one or more of the labels.

Chan teaches detecting and verifying branches along the execution path of the computer program (see column 1, lines 26-35), as Applicant acknowledges (page 13, top). Chan further teaches flow control labels for identifying paths of execution, as described above (see column 1, lines 38-53).

Therefore, in combination, Detlefs and Chan teach a program trace that identifies a path through the computer program when the counter-example identifies one or more of the flow control labels.

Applicant also contends that no motivation, teaching or suggestion exists for combining Detlefs and Chan to teach the claimed limitations in a static checker (page 10, bottom). Applicant acknowledges that Detlefs is directed toward a static checker, but suggests that Chan is directed toward a dynamic checker (page 11, top). Applicant states that because static and dynamic checkers use widely different methods for checking for errors, one skilled in the art would not be motivated to modify Detlefs with Chan to arrive at the claimed invention (page 11, top).

However, although the error checking means taught by Chan includes computing a marker at runtime, this marker is "matched with the _stored marker_ to detect any wild branches" (emphasis added; see column 1, lines 41-43). Moreover, the sequence identifier generated along a path at runtime is compared "with the global label _stored earlier_" (emphasis added; see column 1, lines 54-57). This suggests that at least part of the error checking disclosed by Chan occurs prior to execution time, similarly to static checking. Importantly, Chan teaches that the "global label (path identifier) is _stored at compile time_" (emphasis added; see the abstract). Therefore, the flow control labels taught by Chan for identifying paths of execution are, in fact, a compile-time feature.

Furthermore, the Detlefs and Chan references are both directed toward error checking. Detlefs teaches a static checking method, as described above. Chan teaches a method having flow control labels, also as described above, for verifying the execution paths and conditional branches in a program (see column 1, lines 26-35). Therefore, one of ordinary skill in the art would be motivated to combine the static checking method taught by Detlefs with the flow control labels taught by Chan in order to verify the execution paths and conditional branches in a program.

MY

TUAN DAM
SUPERVISORY PATENT EXAMINER